

Listing of Claims:

1. – 41. (Canceled)

42. (Previously Presented) An isolated recombinant human adenine nucleotide translocator (ANT) polypeptide comprising an amino acid sequence of a human ANT3 polypeptide set forth in SEQ ID NO:33, that localizes to a mitochondrial membrane, that is capable of binding an ANT ligand, and that is produced by a method comprising culturing a host cell comprising a recombinant expression construct comprising at least one regulated promoter operably linked to a nucleic acid encoding the ANT polypeptide.

43. – 45. (Canceled)

46. (Previously Presented) The isolated polypeptide of claim 42 wherein the host cell lacks an endogenous human ANT1 polypeptide as set forth in SEQ ID NO:31 and wherein the host cell lacks an endogenous human ANT2 polypeptide as set forth in SEQ ID NO:32.

47. (Previously Presented) An isolated recombinant human adenine nucleotide translocator (ANT) fusion protein comprising an ANT polypeptide fused to at least one additional polypeptide sequence, wherein the ANT polypeptide comprises an amino acid sequence that is at least 95% identical to a human ANT3 sequence as set forth in SEQ ID NO:33 and wherein the fusion protein localizes to a mitochondrial membrane and is capable of binding an ANT ligand.

48. (Original) The fusion protein of claim 47 wherein said one additional polypeptide sequence is an enzyme sequence or a variant or fragment thereof.

49. – 50. (Canceled)

51. (Previously Presented) An isolated human adenine nucleotide translocator fusion protein comprising an adenine nucleotide translocator (ANT) polypeptide fused to at least one additional polypeptide sequence cleavable by a protease that separates the ANT polypeptide from the remainder of the fusion protein, said ANT polypeptide being capable of localizing to a mitochondrial membrane and capable of binding an ANT ligand, wherein the ANT polypeptide comprises an amino acid sequence that is at least 95% identical to a human ANT3 sequence as set forth in SEQ ID NO:33.

52. – 56. (Canceled)

57. (Previously Presented) The fusion protein of claim 47 wherein the additional polypeptide sequence is a polypeptide having affinity for a ligand.

58. – 112. (Canceled)

113. (Previously Presented) An isolated recombinant human adenine nucleotide translocator fusion protein comprising an adenine nucleotide translocator (ANT) polypeptide fused to at least one additional polypeptide sequence, wherein the ANT polypeptide comprises an amino acid sequence of a human ANT3 polypeptide as set forth in SEQ ID NO:33 and wherein the fusion protein localizes to a mitochondrial membrane and is capable of binding an ANT ligand.

114. (Previously Presented) The fusion protein of claim 113 wherein said one additional polypeptide sequence is an enzyme sequence or a variant or fragment thereof.

115. (Previously Presented) An isolated human adenine nucleotide translocator fusion protein comprising an adenine nucleotide translocator (ANT) polypeptide fused to at least one additional polypeptide sequence cleavable by a protease that separates the ANT polypeptide from the remainder of the fusion protein, wherein the ANT polypeptide comprises the amino

acid sequence of a human ANT3 sequence as set forth in SEQ ID NO:33 and wherein the fusion protein localizes to a mitochondrial membrane and is capable of binding an ANT ligand.

116. (Previously Presented) The fusion protein of claim 113 wherein the additional polypeptide sequence is a polypeptide having affinity for a ligand.

117. (Previously Presented) The isolated polypeptide of claim 42 in which one amino acid is substituted.